The present claims define a solar coating consisting essentially of a sputter-deposited copper oxide. A secondary layer of tin oxide can be used to decrease visible reflectance and also to adjust the color. The solar controlling layer is copper oxide which absorbs and reflects the solar energy; copper oxide is the essential solar controlling layer.

Claims 1, 3, 5, and 10-14 are not anticipated by Gillery, because Gillery fails to disclose each and every element of the claims. In particular, and with reference to claim 1, Gillery fails to disclose a thermostable glazing comprising a substantially transparent substrate with a substantially transparent thermostable solar coating on a surface of the substrate, the substantially transparent thermostable coating consisting essentially of sputter deposited copper oxide.

Instead, Gillery discloses a method for improving the adhesion between metal and metal oxide films in a multi-layer coating, where a metallic layer of silver, copper of gold is used to control the solar energy by reflecting the IR solar radiation. The role of copper oxide, which is a very thin layers, is to form a protecting buffer for the mentioned metal. See Abstract. That is, Gillery discloses use of copper containing layers as primer layers between a metal oxide film and a metal film.

In addition, nowhere does Gillery sputter copper oxide onto a substantially transparent substrate. The only discussion of a transparent substrate in Gillery can be found in the Background section (column 1, lines 50-55), which recites that silver is sputtered onto a transparent substrate of glass. Accordingly, Gillery does not disclose a substantially transparent substrate with a substantially transparent thermostable solar coating consisting essentially of sputter deposited copper oxide. Therefore, claim 1 is not anticipated by Gillery.

Because claims 3, 5 and 10-14 each depend directly or indirectly from claim 1, these claims are patentable over Gillery for at least the same reasons. Applicant requests withdrawal of the rejection and allowance of claims 1, 3, 5, and 10-14.

III. Claims 1, 3 and 4 are not Anticipated by Miyauchi et al.

Claims 1, 3 and 4 are rejected under 102(b) as being anticipated by Miyauchi et al. (US 5,942,331). Applicant respectfully traverses the rejection.

Miyauchi et al. does not anticipate claim because Miyauchi et al. expressly teaches away from the subject matter of claim 1. That is, Miyauchi et al. expressly teaches away from a thermostable glazing comprising a substantially transparent substrate with a substantially transparent thermostable solar coating on a surface of the substrate, the substantially transparent thermostable coating consisting essentially of sputter deposited copper oxide.

Miyauchi et al. expressly recites at Column 2, lines 62-65 that

> "If the total amount of these metal oxides (cobalt oxide, chromium oxide, **copper oxide**, manganese oxide, and nickel oxide) is too high, **the strength of the oxide film is lowered**. Therefore, the total amount of cobalt oxide, chromium oxide, **copper oxide**, manganese oxide, and nickel oxide **is preferably 40 wt % or less**."

Miyauchi et al. goes on to state at Column 3, lines 7-12 that

> "If the total amount of the coloring metal oxides ... is too large, the film formation property tends to be lowered. Therefore, the total amount of coloring metal oxides ... is preferably 10 to 50 wt % and more preferably 25 to 40 wt %."

Accordingly, the colored-film glass article of Miyauchi et al. cannot be a thermostable glazing comprising a substantially transparent substrate with a substantially transparent thermostable solar coating on a surface of the substrate, the substantially transparent thermostable coating consisting essentially of sputter deposited copper oxide, as recited in claim 1, because such substantially transparent thermostable coating would render the colored-film glass article of Miyauchi et al. unsuitable for its intended purpose. Therefore, claim 1 is not anticipated by Miyauchi et al.

Because claims 3 and 4 each depend directly or indirectly from claim 1, these claims are patentable over Miyauchi et al. for at least the same reasons. Applicant requests withdrawal of the rejection and allowance of claims 1, 3 and 4.

IV. Claims 2, 6 and 9 are Patentable over Miyauchi et al.

Claims 2, 6 and 9 are rejected under 103(a) as being unpatentable over Miyauchi et al. Applicant respectfully traverses the rejection.

Miyauchi et al. cannot render claims 2, 6, and 9 obvious because Miyauchi et al. expressly teaches away from the claimed subject matter. As discussed above, Miyauchi et al. expressly recites at Column 2, lines 62-65 that "If the total amount of these metal oxides (cobalt oxide, chromium oxide, copper oxide, manganese oxide, and nickel oxide) is too high, the strength of the oxide film is lowered. Therefore, the total amount of cobalt oxide, chromium oxide, copper oxide, manganese oxide, and nickel oxide is preferably 40 wt % or less." Miyauchi et al. goes on to state at Column 3, lines 7-12 that "If the total amount of the coloring metal oxides ... is too large, the film formation property tends to be lowered. Therefore, the total amount of coloring metal oxides ... is preferably 10 to 50 wt % and more preferably 25 to 40 wt %." Accordingly, the colored-film glass article of Miyauchi et al. cannot be a thermostable glazing comprising a substantially transparent substrate with a substantially transparent thermostable solar coating on a surface of the substrate, the substantially transparent thermostable coating consisting essentially of sputter deposited copper oxide, as recited in claim 1, because such substantially transparent thermostable coating would render the colored-film glass article of Miyauchi et al. inoperable for its intended purpose. Thus, Miyauchi et al. fails to teach or suggest the subject matter of claim 1

Because claims 2, 6 and 9 each depend directly or indirectly from claim 1, these claims are patentable over Miyauchi et al. for at least the same reasons.

Further, Miyauchi et al. fails to teach or suggest sputter deposited copper oxide. Miyauchi et al. recites coating methods at Column 6, lines 9-14 stating "Examples of the coating method which can be used include spin coating, dip coating, spray coating, and printing. In particular, the printing such as gravure coating, flexographic printing, roll coating, or screen printing is preferable because of its high productivity and efficient use of the coating solution composition." Nowhere, however, does Miyauchi et al. disclose, teach or suggest a thermostable glazing comprising sputter deposited copper oxide, as recited in claim 1. That is, Miyauchi et al. does not teach or suggest that one skilled in

the art would be motivated to sputter deposit copper oxide onto the glass article of Miyauchi et al. Thus, Miyauchi et al. does not teach or suggest the subject matter of claim 1.

Because claims 2, 6 and 9 each depend directly or indirectly from claim 1, the claims are patentable over Miyauchi et al. for at least the same reasons. Applicant requests withdrawal of the rejection and allowance of claims 2, 6, and 9.

V. Conclusion

Having addressed all outstanding issues, Applicant requests withdrawal of all rejections and issuance of the case.

Respectfully submitted,
Demiryont, H.

Peter D. McDermott
Attorney for Applicant
Reg. No. 29,411

Banner & Witcoff, Ltd.
28 State Street, 28th Floor
Boston, MA 02109
Telephone: (617) 227-7111
Facsimile: (617) 227-4399

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on:7/23/02.

Rachelle Chery — 23-Jul-02
Rachelle Chery — *Date*